

Classification of Reactions.—Of 1,061 children injected 76 (*i.e.*, 6·2 per cent.) had reactions.

Reactors (76)—	Per Cent.
++ Moloney (initially), 29 cases	38
+ Moloney (initially), 13 cases	17
— Moloney (initially), first injection 11 cases	14·5
— Moloney (initially), second injection, 16 cases	21
.. Moloney (initially), third injection, 3 cases	4
Immediate general reaction, 4 cases	5

A glance at the above table shows clearly that the Moloney positive reactor who receives a reduced dose of anatoxin is much more likely to develop an unpleasant reaction than the Moloney negative reactor. The Moloney negative reactor may, however, have a reaction occasionally.

DIPHTHERIA IMMUNIZATION WITHOUT PRELIMINARY TESTING INDEFENSIBLE.

In the course of the work parents occasionally insisted children should be given anatoxin injections when they had missed the preliminary tests. Also in the younger age-groups we at first would protect an occasional child who had been absent at preliminary tests by proceeding direct to injections. Experience has shown this group to produce undue reactions as compared with the tested group.

Some of the children are naturally somewhat awed when they come along for their preliminary skin-test, and some may even vomit or faint before anything is done to them. When the teachers are sensible and make light of the procedure instead of sympathizing with the children there is usually no trouble whatsoever.

THE TYPES OF REACTION.

1. *Local.*—An area of marked erythema, swelling, tenderness at the site of injection.

2. *General.*—Headache, vomiting or nausea, anorexia, and sometimes pyrexia coming on a few hours after the injection was given. As these symptoms are chiefly subjective it is often difficult to assess the extent of the general reaction. In some cases we are sure they have had a purely psychological basis.

3. *The Immediate General Reaction* (incidence about three per 1,000), is, we believe, a manifestation of true anaphylactic shock and is not an anxiety phenomenon. It may occur after the first, second, or third injection of anatoxin.

The following is a description of such a reaction: The child looks very pale as if he is about to faint. The pulse is slow and very weak, and later may be irregular. The child is conscious throughout and usually complains of feeling cold, but of nothing else.

There is an immediate response to adrenalin.

SUSCEPTIBILITY TO DIPHTHERIA OF PRESENT CHILD POPULATION.

Of School-children.—During 1937 children of all ages attending public or private schools to a total of 4,198 were Schick tested. Of these 3,055 or 72·8 per cent. were Schick positive. Readings were taken at forty-eight hours in a proportion of rural schools where travelling made this necessary, but in the majority at seventy-two hours. Redness and infiltration of 1 cm. and more was accepted as positive.

When rural and larger town children (towns 5,000 population or more) are considered separately, the susceptibility of town children is 66·6 per cent., as against 75·3 per cent of rural children. The danger from diphtheria is therefore widespread throughout the district. For some years now only sporadic cases of diphtheria have arisen, and no major epidemic. A generation of school-children has grown up whose immunity to diphtheria is low (27·2 per cent. Schick negative).

Of Pre-school Children.—Only a proportion of the pre-school children were Schick tested. One hundred and forty-four babies and children under five years gave 133 Schick positives, or 92·4 per cent.

Of Maori Children.—One hundred and seventy-eight Maori children tested gave 50 Schick positives (28·1 per cent.), and 128 Schick negatives (71·9 per cent.). This is practically the reverse of the susceptibility among pakeha children.

One of us (H. B. T.) tested 2,054 Maori children in 1930, finding 255 Schick positives (12·41 per cent.). The small number of Maori children tested in 1937 show increased susceptibility. This is thought to be due to the admixture of pakeha blood. In the 1930 group more than half the total were full-blooded Maoris; in the 1937 group the majority were half or more than half pakeha blood.

By Ages.—The accompanying graph illustrates the susceptibility by ages in years. Beginning at 55 per cent. at age one there is a sharp rise to 100 per cent at age three. Thereafter there is a very gradual fall through the ages to return at age fourteen and older to 58 per cent., practically the same level as at age one. The years of greatest risk are seen to be ages two to seven.